

CLAIMS

What is claimed is:

1. A refrigerator, comprising:
a refrigerator compartment;
an opening formed at a front of the door;
a home bar provided in the opening so as to have a storage chamber disposed therein;
a home bar door provided at the opening to selectively open or close the home bar; and
an automatic opening unit installed at an edge of the opening, and pushing the home bar door to a predetermined angle so that the home bar door is automatically opened by gravity.
2. The refrigerator as set forth in claim 1, further comprising:
first and second hinge shafts mounted to opposite sides of a lower end of the home bar door; and
first and second shaft holes provided at opposite sides of a lower edge of the opening to receive, respectively, the first and second hinge shafts, wherein the home bar door rotates with the first and second hinge shafts rotated in the first and second shaft holes, respectively.
3. The refrigerator as set forth in claim 2, wherein the automatic opening unit comprises:
a push rod projecting away from the refrigerator compartment from the edge of the opening; and
an elastic member arranged adjacent to the push rod to move the push rod in a direction extending along the projected push rod,
wherein the home bar door rotates in a forward direction to open, when the push rod is pushed in the forward direction by the elastic member.
4. The refrigerator as set forth in claim 3, further comprising:
a casing having a box shape which is opened at a front thereof, wherein the elastic member is set in the casing, and the push rod projects from the casing through the open front of the casing by the elastic member.

5. The refrigerator as set forth in claim 1, further comprising:

a hook unit mounted to an upper portion of the home bar door so as to project toward the opening; and

a latch unit mounted to an upper edge of the opening at a position corresponding to the hook unit, wherein the hook unit engages with or disengages from the latch unit so that the home bar door selectively closes or opens the opening.

6. The refrigerator as set forth in claim 5, wherein the latch unit comprises:

a slide unit engaging with the hook unit; and

an elastic member arranged adjacent to the slide unit to move the slide unit in a direction extending along a length of the slide unit,

wherein the slide unit compresses the elastic member and simultaneously engages with the hook unit when the hook unit pushes the slide unit upon closure of the home bar door, and the slide unit is pushed along with the hook unit by the elastic member, which decompresses, and simultaneously disengages from the hook unit when the upper portion of the closed home bar door is pushed to open the home bar door.

7. The refrigerator as set forth in claim 6, wherein said elastic member comprises:

a coil spring.

8. The refrigerator as set forth in claim 1, further comprising:

one or more hinge shafts; and

a damping unit mounted to at least one position on a lower portion of the home bar door to reduce a rotating speed of the one or more hinge shafts when the home bar door is being opened, allowing the home bar door to controllably open.

9. The refrigerator as set forth in claim 8, wherein the damping unit has a sealed box shape, and an end of a respective one of the one or more hinge shafts is connected to the damping unit, to reduce the rotating speed of the respective one of the hinge shafts connected to the damping unit when the home bar door is opened.

10. The refrigerator as set forth in claim 9, wherein the damping unit comprises:
a box-shaped casing with a fluid disposed therein;
a rotary member rotatably installed in the box-shaped casing such that an end of the rotary member projects from the box-shaped casing with the fluid disposed in the box-shaped casing to reduce the rotating speed of the rotary member; and
the hinge shaft engaging with the rotary member to rotate along with the rotary member.

11. The refrigerator as set forth in claim 1, further comprising:
a lighting unit installed in the home bar; and
a lighting switch mounted to a second edge of the opening opposite to the edge of the opening to which the automatic opening unit is installed, said lighting switch turning on or turning off when the home bar door is opened or closed, respectively, to turn on or turn off the lighting unit.

12. A refrigerator with one or more compartments therein to cool food, comprising:
a door of a respective one of the compartments to selectively open and close the respective one of the compartments;
a home bar disposed in the door to provide a storage chamber therein;
a home bar door provided at a front of the home bar to selectively open or close the home bar; and
an automatic opening unit provided in a vicinity of the home bar to push the home bar door to a position such that the home bar door is automatically opened by gravity.

13. A refrigerator with one or more compartments therein to cool food with a door of a respective one of the compartments to selectively open and close the respective one of the compartments, comprising:
a storage unit disposed in the door to provide storage therein;
a storage door provided at a front of the storage unit to open or close the storage unit;
and
an opening unit provided in a vicinity of the storage unit to open the storage door by

rotating the storage door to a position in which a gravitational force causes the storage door to move to a fully opened position.

14. A refrigerator with one or more compartments therein to cool food with a door of a respective one of the compartments to selectively open and close the respective one of the compartments, comprising:

a home bar disposed in the door to provide a storage chamber therein;

a home bar door provided at a front of the home bar to rotatably open or close the home bar; and

an opening unit provided in a vicinity of the home bar to rotate the home bar door to a position such that the home bar door is opened thereby.

15. A refrigerator with one or more compartments therein to cool food with a door of a respective one of the compartments to selectively open and close the respective one of the compartments, comprising:

a storage unit disposed in the door to provide storage therein;

a storage door provided at a front of the storage unit to selectively open or close the storage door; and

an opening unit provided in a vicinity of the storage unit to move the home bar door to a position such that the storage door is automatically opened by gravity.

16. The refrigerator as set forth in claim 15, further comprising:

one or more hinges mounted to a lower end of the storage door and an edge of the storage unit to rotate the storage door thereby.

17. The refrigerator as set forth in claim 16, wherein the opening unit comprises:

an expansion unit projectable toward the storage door from an edge of the storage door to rotate the storage door away from the refrigerator, when the storage door is not latched close.

18. The refrigerator as set forth in claim 17, wherein said expansion unit comprises:

a casing which is opened at a front thereof;

a push rod slidably set in the casing with a portion of the push rod projecting from the casing; and

an elastic member disposed in the casing adjacent to the push rod to bias the push rod to a fully extended position.

19. The refrigerator as set forth in claim 15, further comprising:

a latch unit mounted to upper portions of the storage unit and the storage door at positions corresponding to each other such that the storage door is latchable when in a closed position adjacent to the door of the refrigerator.

20. The refrigerator as set forth in claim 19, wherein the latch unit further comprises:

a latch member disposed at the upper portion of the storage unit; and

a hook unit disposed at the upper portion of the storage door so as to engage with or disengage from the latch member to selectively close or open the storage unit.

21. The refrigerator as set forth in claim 20, wherein said latch member comprises:

a casing thereof;

a slide unit slidably disposed at the casing with a portion of the push rod projecting from the casing and engagable with the hook unit; and

an elastic member disposed in the casing adjacent to the slide unit to bias the slide unit to project from the casing such that the slide unit compresses the elastic member and simultaneously engages with the hook unit when the hook unit moves the slide unit upon closure of the storage door, and the slide unit is projected from the casing and moves along with the hook unit by the elastic member to disengage from the hook unit when the upper portion of the closed storage door is pushed.

22. The refrigerator as set forth in claim 21, wherein the elastic member comprises:

a coil spring.

23. The refrigerator as set forth in claim 15, further comprising:

one or more hinge shafts; and

a damping unit mounted to at least one position on the storage door to dampen a rotation of the one or more hinge shafts when the storage door is opened to controllably open the storage door.

24. The refrigerator as set forth in claim 23, wherein the one or more hinge shafts and the damping unit have a common cross-section such that the rotary member rotates along with the one or more hinge shafts.

25. The refrigerator as set forth in claim 23, wherein:
the one or more hinge shafts are plural hinge shafts; and
the damping unit is plural discrete damping units mounted to positions on the storage door to reduce a rotating speed of corresponding ones of the plural hinge shafts when the storage door is opened.

26. The refrigerator as set forth in claim 23, wherein the damping unit is sealed and mates with an end of one of the hinge shafts to reduce a rotating speed of the one hinge shaft mated to the damping unit when the storage door is opened.

27. The refrigerator as set forth in claim 26, wherein the damping unit comprises:
a box-shaped casing;
a rotary member rotatable in the casing such that an end of the rotary member projects from the casing;
a damping member provided in the casing adjacent to the rotating member to reduce a rotating speed of the rotary member; and
the hinge shaft mating with the rotary member to rotate along with the rotary member.

28. The refrigerator as set forth in claim 27, wherein the damping member is a damping fluid disposed around the rotary member.

29. The refrigerator as set forth in claim 28, wherein the damping member is oil.

30. The refrigerator as set forth in claim 15, wherein the opening unit is substantially prevented from being exposed to an exterior of the refrigerator by the storage door.

31. The refrigerator as set forth in claim 15, wherein the storage unit has a volume smaller than that of the refrigerator compartment with access provided to the storage unit by the storage door without opening the door to the refrigerator.

32. The refrigerator as set forth in claim 15, further comprising:
a lighting unit disposed in the storage unit; and
a lighting switch disposed such that the lighting switch is turned on or turned off when the storage door is opened or closed, respectively, to turn on or turn off the lighting unit.

33. A refrigerator with one or more compartments therein to cool food with a door of a respective one of the compartments to selectively open and close the respective one of the compartments, comprising:

one or more first storage doors;
a storage unit disposed in the door to provide storage therein; and
a second storage door provided at a front of the storage unit to cover the one or more first storage doors, wherein the one or more first storage doors is provided adjacent to the second storage door at the front of the storage unit to selectively open or close the storage unit and to substantially prevent cool air from escaping from the storage unit.

34. The refrigerator as set forth in claim 33, wherein:
the one or more first storage doors slides to selectively open or close the storage unit;
and
the second storage door rotates to provide access to the one or more first storage doors.

35. The refrigerator as set forth in claim 34, wherein the one or more first storage doors slides in a horizontal direction.